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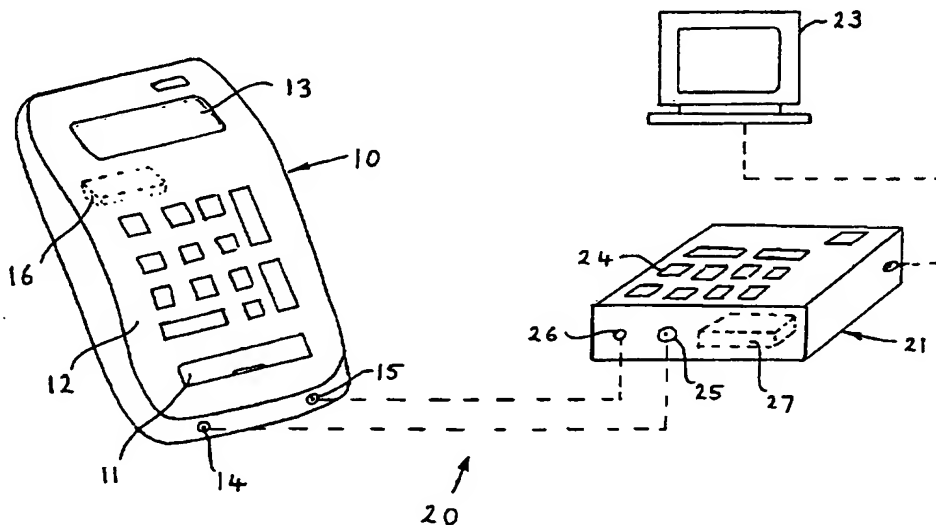
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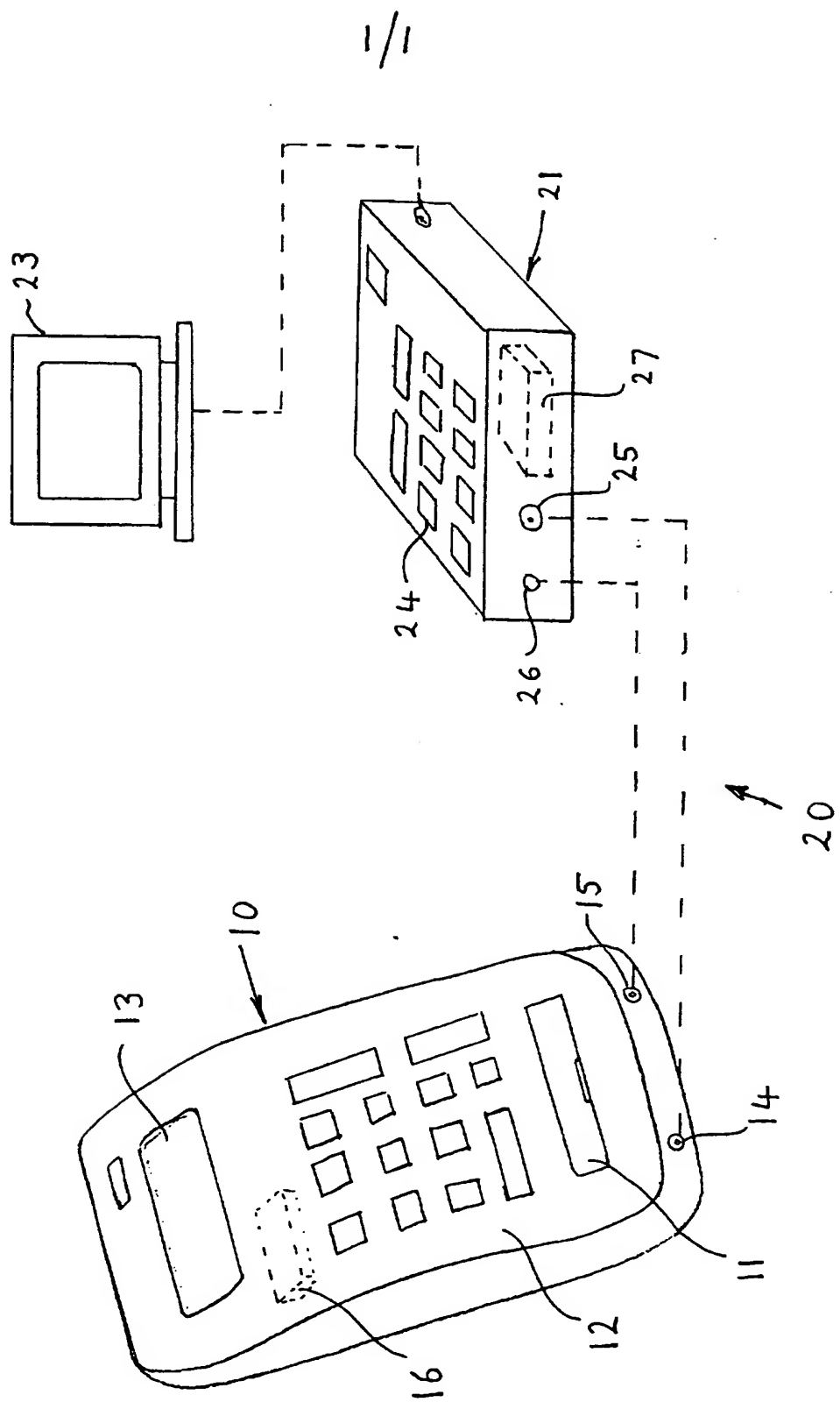
(54) Abstract Title

A portable scoring device

(57) A portable device 10 which may be used for a game such as golf, has a first 14 input for pre-prepared data such as course information, and second input 12 such as a keyboard for data such as scores input during the game and an output 15 for transferring data to a central computer 21 once the game is over. The device 10 may be linked to the central computer 21 by direct electrical contact, where the first input 14 and the output 15 are electrical terminals. Alternatively, the device 10 may have a port for receiving a data transfer module such as a floppy disk, in which case the port would serve as the first input 14 and the output 15. The device may have a clip to secure it to a golf bag, a shield for the LCD display and a waterproof keyboard. The central computer 21 can store pre-prepared data relating to, for example, the course to be played, and can download this information to each of a plurality of devices carried by different groups of players when required. Data such as scores may also be transferred from the portable device 10 to the central computer 21 at the end of the game, and the computer 21 can calculate handicap details and carry out other statistical analysis.



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DATA TRANSFER

This invention relates to data transfer and including but not limited to a data transfer device, a data transfer system and a method of recording and transferring data. The invention relates in particular, though not exclusively, to data transfer for the purpose of recording scores during a game, such as a game of golf which typically is played concurrently by a group of players, and for enabling the scores of the respective players to be analysed and compared.

As is well known, the conventional procedures for recording the scores of golf players are manually based. Typically up to four players combine concurrently to play a round of golf, and one or more of those players will make use of a pre-printed score card on which to enter the number of strokes taken by each player for a particular hole, usually entering that data after all of the players have completed play at that hole.

In the case of a club tournament or other such event, the score cards of all participating groups of players are then handed to a club official who evaluates the scores so as to establish, for example, a new league position, match winner, or handicap rating etc.

Whilst the use of a score card is well established and understood, it suffers the long-standing disadvantage of not being convenient - especially during inclement weather. Furthermore, analysing the scores recorded on the large number of score cards which may be completed during a tournament can be time consuming and difficult to perform accurately and reliably.

The present invention seeks to provide, in accordance with one of its aspects, an improvement to the conventional score card for the recording of data, and to a system and method for the transfer of data whereby the data, such as scoring details, may be transferred and processed more readily and reliably than hitherto.

In accordance with one of its aspects the present invention provides a portable data transfer device comprising:-

- display means,
- a power source,
- first data input means for inputting to the device pre-prepared data or at least one set of data relating to at least one feature of a series of successive operational stages,
- second data input means for inputting to the device data relating to at least one event associated with at least one stage of said series of successive operational stages,

- storage means for storing at least some of said inputted data, and
- a data output port for transferring from the data transfer device data relating to said at least one event associated with said at least one series of successive operational stages.

In accordance with another of its aspects the present invention provides a data transfer system comprising a plurality of said portable data transfer devices of the present invention and a central data processor, said central data processor comprising:-

- storage means for storing and or preparing data and or at least one set of data relating to at least one feature of a series of successive operational stages,
- first output means for transferring said data to at least one of said portable data transfer devices,
- input means for receiving from at least one of said portable data transfer devices data relating to at least one event associated with at least one stage of said series of successive operational stages,
- processing means for processing data received by said input means from said portable data transfer device(s), and
- second output means for outputting processed data.

The display means of the portable data transfer device typically may comprise a visual display device such as an LCD (liquid crystal display) device, and the power source may comprise, for example, a battery (such as a rechargeable or long life battery) and/or a solar cell. Operation of the display means optionally may be accompanied by an audio communication, for example in a game of golf to announce the next hole number and length or a player's name or identity against which a score should be entered. The display means may comprise a visual display device of a kind having a back-lit feature.

The second output means of a central data processor of the system may comprise a similar type of display means or, for example, a monitor or printer device, or means for connection to a separate printer or monitor.

The first input port of the portable data transfer device may be an electrical terminal for connection to a source of pre-prepared data, e.g. for connection to a first output of a central data processor.

The second input port of the portable data transfer device may, for example, comprise a key pad, e.g. a water proof type of key pad having a plurality of keys for performing prescribed functions, such as moving from one operational stage to another (e.g. to input a new set of scores after a set of scores of one hole have been entered).

Data transfer between a portable data transfer device and a central data processor may be by means of a temporary direct electrical connection, by means of a transfer module such as a floppy disc or similar, or, for example, by a radio transmission.

If the portable transfer device is of a kind for use with a data transfer module such as a floppy disc, it is to be appreciated that a location port for said module may serve to perform the functions of said first data input means and said data output port, and, optionally, also said storage means.

Similarly, the central data processor may comprise a transfer module location port, and said location port may serve to perform the functions of said first (data) output means and said (data) input means.

The storage means of the portable data transfer device may be comprised by a data transfer module as aforescribed, or by a built in memory device.

The portable data transfer device may comprise retention means such as a clip or a magnet for example to enable it to be temporarily or permanently attached to a golf bag or trolley. It may incorporate a shield for a visual display region of the device, especially if that display is an LCD unit. The shield may be formed integrally with the device and/or may be pivotable or otherwise movable to or from a position at which it can shield incident sun-light from the screen.

The system may be programmed and/or operable in a manner in which the central data processor can transfer to the or each portable data transfer device pre-prepared information in respect of one or more of the following features or functions:-

- Course introduction at start up
- The day/event sponsor identity
- The hole number
- Playing length of each hole, optionally as a function of tee information input, i.e. white/yellow/red at start up
- Course information such as any ground under repair, winter tee/winter green, out of bounds left/right
- Hole sponsorship details
- Type of game to be played, e.g. fourball/twoball, match play, stableford etc
- Name, membership number, and/or handicap of each of the players
- Number of the starting hole.

The portable data transfer device may be adapted to retain the score of each player at each hole as it is played, move the display to give information relevant to the next hole, and prompt the player to the tee for that hole.

At the conclusion of a round of golf the portable data transfer device would be returned to the club house for connection to a central data processor such as a PC which could then be operated to provide a print out of the scores or other data such as match position result. If the portable device operates from a battery, a new or recharged battery may be installed at the club house so that the device is ready for re-use. Alternatively, if the portable data transfer device is of the kind comprising a removable transfer module such as a floppy disc, only that module would need to be connected to the central processor.

The central data processor may be programmed to recover data from and export data to the portable data transfer devices in accordance with one or more selected operating instructions pre-installed into that processor. It may be arranged to be capable of at least one or more of the following tasks:-

- Provide to a portable device information re longest drive, hole lengths, days/event sponsor, tee off times, holes in play, and/or ground under repair
- Update handicap details
- Provide continuously updated results information during tournaments, e.g. by connection to monitor displays in the club house

One embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawing which is a schematic view of a data transfer system of the invention and incorporating a portable data transfer device also of the invention.

A portable recorder unit 10 comprises a battery power source 11, a key pad 12, an LCD display 13, an input terminal 14, an output terminal 15, and a memory 16. These component parts are contained as appropriate within a water tight housing.

The portable unit 10 is part of a data transfer system 20 which also comprises a central computer unit 21 that is connected to an independent display monitor 23.

The computer unit 21 has a key pad 24 for inputting information which is to be transferred to the memory of a portable unit 10 as pre-prepared information, for example information relevant to the course conditions and sponsorship for a particular day. The computer unit has a first output terminal 25 for connection to the input of the portable unit 10, and an input terminal 26 for receiving scores and any other play dependent information available from the portable unit. Flexible connection leads (not shown) are used to interconnect terminal 14 to terminal 25 and to interconnect terminal 15 to terminal 26. Although each of the units 10, 21 has been shown as having a input terminal and an output terminal, it is to be understood that on each of the units a single terminal may act as both an input and an output terminal.

The central unit 21 additionally comprise a memory and processor 27 in conventional manner and programmed to perform or allow operation of a chosen range of tasks.

CLAIMS:-

1. A portable golf scoring device comprising:-
 - a visual display screen adapted to display hole information and score information for each of a plurality of players,
 - a power source,
 - first data input means comprising a keypad for inputting to the device pre-prepared data relating to at least one feature of a series of holes to be played,
 - second data input means for inputting to the device the scores of each of a plurality of players at each successive hole,
 - storage means for storing at least some of said inputted score data, and
 - a data output port for transferring from the storage means score data relating to the scores at said successive holes.

2. A portable data transfer device comprising:-
 - display means,
 - a power source,
 - first data input means for inputting to the device pre-prepared data or at least one set of data relating to at least one feature of a series of successive operational stages,
 - second data input means for inputting to the device data relating to at least one event associated with at least one stage of said series of successive operational stages,
 - storage means for storing at least some of said inputted data, and
 - a data output port for transferring from the data transfer device data relating to said at least one event associated with said at least one series of successive operational stages.

3. A data transfer device according to claim 2, and adapted to transfer data to a central data processor by means of one or more of a temporary direct electrical connection, a transfer module and a radio transmission.

4. A data transfer device according to claim 2 or claim 3, wherein at least one of the first data input means and the data output port of the data transfer device is comprised by an electrical terminal.

5. A data transfer device according to any one of claims 2 to 4, wherein the device comprises a module location port for receiving a data transfer module, said module location port serving as said first data input means and said data output port.
6. A data transfer device according to claim 5, wherein the device includes a data transfer module and the storage means is comprised by said data transfer module.
7. A data transfer device according to any one of claims 2 to 5, wherein the storage means is comprised by a built-in memory device.
8. A data transfer device according to any one of claims 2 to 7, wherein the second data input means comprises a keypad.
9. A data transfer device according to any one of claims 2 to 8, wherein the device comprises at least one of a retention means clip or magnet, a shield for a visual display region of the device, an LCD display, and a waterproof keypad.
10. A portable data transfer device according to claim 2, and substantially as hereinbefore described.
11. A data transfer system comprising a plurality of portable data transfer devices according to any one of claims 2 to 10 and a central data processor, said central data processor comprising:-
 - storage means for storing and or preparing data and or at least one set of data relating to at least one feature of a series of successive operational stages,
 - first output means for transferring said data to at least one of said portable data transfer devices,
 - input means for receiving from at least one of said portable data transfer devices data relating to at least one event associated with at least one stage of said series of successive operational stages,
 - processing means for processing data received by said input means from said portable data transfer device(s), and
 - second output means for outputting processed data.

12. A system according to claim 11, wherein the central data processor comprises a transfer module location port adapted to perform the functions said first data output means and said data input means.

13. A system according to claim 11 or claim 12 for use as a golf scoring device, wherein the system is programmed and/or operable in a manner in which the central data processor can transfer to the or each portable data transfer device pre-prepared information in respect of one or more of the following features or functions:-

- Course introduction at start up
- The day/event sponsor identity
- The hole number
- Playing length of each hole, optionally as a function of tee information input,
- Course information:-
 - ground under repair,
 - winter tee/winter green,
 - out of bounds left/right
- Hole sponsorship details
- Type of game to be played
- Name, membership number, and/or handicap of each of the players
- Number of the starting hole.

14. A system according to any one of claims 11 to 13, wherein the central data processor is programmed to recover data from and export data to the portable data transfer devices in accordance with one or more selected operating instructions pre-installed into that processor.

15. A system according to any one of claims 11 to 15 and for use in golf scoring, wherein the central data processor is capable of at least one or more of the following tasks:-

- Provide to a portable device information re longest drive, hole lengths, days/event sponsor, tee off times, holes in play, and/or ground under repair
- Update handicap details
- Provide continuously updated results information during tournaments, e.g. by connection to monitor displays in the club house.

16. A device or system according to any one of the preceding claims, wherein it comprises a portable data transfer device adapted for use in a game of golf to retain the score of each player at each hole as it is played, move the display to give information relevant to the next hole, and prompt the player to the tee for that hole.



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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): A6D (D7B, D7X)

Int Cl (Ed.6): A63B 71/06

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Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2 271 063 A (OLIVIA MAY) - see whole document	1-6, 8, 9
X	GB 2 243 302 A (ENTECH) - see whole document	1-4, 7-9, 11-15
X	WO 97/02873 A1 (WERGELAND) - see whole document	1-3, 5, 6, 8, 9, 11-15
X	WO 90/03204 A1 (JENSEN) - see whole document	1-6, 8, 9
X	US 5 127 044 (BONITO) - see whole document	1-3, 5, 6, 8, 9, 11-15

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